

PROPERTY LIMITS: DEBATES ON THE BODY, NATURE AND CULTURE IN MELANESIA

STUART KIRSCH
University of Michigan

The concept of property is expanding both in scope, through the creation of novel forms of property, including claims to cultural property, and in scale, ranging from the molecular in the patenting of genetic material to the planetary in the establishment of markets for trading carbon and other pollutants. Yet these claims are simultaneously being called into question in debates about the appropriate limits to property regimes.

There are familiar examples of these debates. In *The mystery of capital*, the Peruvian economist de Soto (2000) attributes the genius of capitalism to its ability to convert all things into property, and thereby into capital. He endorses private property and the development of the legal instruments that regulate the mortgaging of assets, reconfiguring the world in monetary terms (see Pietz 1999: 62). Yet to mortgage assets is also to risk their alienation, and in the Third World contexts about which de Soto writes, objections to the privatisation of land ownership are based on the recognition that customary forms of land tenure and informal strategies for securing access to land can provide a measure of security to the poor in an otherwise uncertain world. These concerns were highlighted by recent protests in Papua New Guinea against plans to privatize land holdings, the result of World Bank structural adjustment policies, which led to the deaths of several students.¹

The three debates about property limits that I consider in this article address events in Papua New Guinea, where people make claims on one

1. Comparable examples from elsewhere in the region abound (e.g., van Meijl and von Benda-Beckmann 1999).

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another through transactions carried out in languages and practices that challenge many of the assumptions that underlie Euro-American property regimes (see Strathern and Hirsch, 2004). The first case considers the patent awarded for a cell line extracted from a Hagahai man from the Highlands region. The second case examines the relationship between property and pollution downstream from the Ok Tedi copper and gold mine in Western Province. The third case evaluates the response of public intellectuals in Papua New Guinea to international debates on cultural property rights. These examples cover a range of seemingly incommensurate objects, including genetic material, pollution and culture. The associated debates took place in a variety of forums, including international deliberations carried out through the internet, legal claims argued before the Australian courts and discussions among scholars, politicians and journalists in Papua New Guinea. They incorporate a wide array of voices, including indigenous persons, anthropologists, lawyers, corporate executives and Nongovernmental Organizations (NGOs).² My relationship to these cases also varies. While I was not involved in the Hagahai case, I have participated as both an ethnographer and an advocate for the communities affected by the Ok Tedi mine (Kirsch, 2002), and have also contributed to scholarly deliberations on cultural property rights in the Pacific (Kirsch, 2001a; 2001b). This article considers these debates about property limits in relation to controversial proposals to mobilize copyrights, patents and other legal instruments on behalf of indigenous communities by multilateral agencies, including United Nations Scientific and Cultural Organization (UNESCO) and the World Intellectual Property Organization (WIPO). One impetus for these endeavors was the World Trade Organization's imposition of Euro-American patent regimes on its member states through the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement. Some NGOs have endorsed these proposals, while others have objected to them on various grounds, as I describe below.

2. It has been argued that the primary beneficiaries from cultural property rights debates have been the scholars and NGOs who have carved out a niche for their work in these arenas. Rabinow (2002: 143; see also 147 fn. 7) has criticized scholars for being unwilling to acknowledge their position in the larger "market" for ideas.

As Euro-American conceptions of property gain currency through globalization, debates on property limits reveal the presence of other ideas that circulate along with property forms. These debates are commonly carried out in terms of concepts that are central to how Euro-Americans imagine themselves and the world, including particular ideas about the body, nature and culture. My argument is that debates about property limits perversely contribute to the establishment of these concepts in the place of local alternatives.

Property and the indigenous body

The first debate was concerned with the potential commodification of human bodies and body parts, including genetic material. It addressed a patent granted to scientists affiliated with the US National Institutes of Health (NIH) on March 14, 1996 for a cell line extracted from the blood of a Hagahai man from the Schrader Mountains in Papua New Guinea. It contained a variant of the human T-cell virus HTLV-1, which does not cause leukemia like other varieties of HTLV-1. The immortalized cell line had potential utility and economic value for the development of diagnostic tests and vaccines (Bhat, 1996: 30). While the patent conformed with NIH policy at the time, it was withdrawn a year later (Bhat, 1996: 30; Friedlaender, 1996: 22).

The medical anthropologist associated with the patent argued that it protected the economic interests of the Hagahai from whom the cell line was derived.³ Making these rights explicit was considered essential given the findings in the case of *John Moore v. Regents of the University of California* (1991), in which an individual's claim to a cell line derived from his tissue was rejected by the courts (Rabinow, 1996). Unlike Moore's claim, which was based on his rights as an individual, the Papua New Guinea claim was made on behalf of the

3. Carol Jenkins was employed by Institution of Medical Research in Goroka. She was well known to the Hagahai through her biomedical research and her help in bringing medical aid to the community since 1983. Hagahai blood samples were sent to Gadjusek, a colleague of Jenkins at NIH who had previously been awarded a Nobel prize for his research on the fatal wasting disease kuru, which affected another Highlands group in Papua New Guinea during the 1950s (Anderson, 2000; Hirsch, 2004). Gadjusek and Jenkins were named on the US version of the patent along with a third colleague.

Hagahai as a whole. The patenting of the Hagahai cell line was subsequently criticized by the Canadian NGO, Rural Advance Front International (RAFI).⁴ RAFI focuses on the socioeconomic implications of new technologies, especially biotechnology. In particular, it opposes the patenting or licensing of all life-forms.⁵ RAFI noted that the Hagahai patent included the individual's entire cell line, including his DNA. Following the logic of the Moore decision, RAFI argued that this genetic material no longer belonged to the man from whom it was extracted, but through the patent granted to NIH had become the property of the United States government. This led to their assertion that the scientists had "patented a human life", initiating a global e-storm in which anthropologists, biologists and indigenous rights groups expressed their views on the appropriate limits to property regimes with respect to the human body and genetic material (Riordan, 1995; Taubes, 1995).^{6,7} The scientists associated with the patent disputed RAFI's allegation, explaining that the breadth of the patent was required because HTLV-1 cannot be supported outside of an immortalized cell line.⁸

RAFI the vampire slayer

Debates about the Hagahai patent coincided with RAFI's criticism of the proposed Human Genome Diversity Project (HGDP), which critics dubbed the "vampire project". This endeavor was designed to supplement

4. RAFI is now known as the ETC Group (<http://www.rafi.org/main.asp>).

5. See also RAFI's criticism of Brent Berlin's ethnobotany project among Mayan communities in Mexico (Belejack, 2001; Brown, 2003).

6. The term "e-storm" refers to a flurry of electronic mail that moves rapidly through multiple networks of users and user-groups. It has the capacity to spread profligately in a very short period of time. Another famous anthropological e-storm was precipitated by the circulation of Terence Turner and Leslie Sponsel's email warning about the publication of Tierney's (2000) *Darkness in El Dorado*.

7. Greely (1998: 490), the Stanford lawyer who chaired the North American ethics subcommittee of the Human Genome Diversity Project (HGDP), has argued that comparisons between the patenting of a gene or a part of the genome and the commodification of humanity muddle the distinction between genes and persons.

8. Immortalisation refers to the process of establishing a line of cells that can reproduce indefinitely outside of the human body under laboratory conditions.

the research of the Human Genome Project, which analyzed genetic material from a small number of individuals in mapping the human genome.⁹ The scientists who organized the HGDP sought genetic information from a broad sample of marginal or minority populations in which they expected to find the greatest genetic diversity (Weiss, 1996; Cunningham, 1998). Consonant with "Last of the Mohicans" narratives that assume the eventual disappearance of indigenous peoples, the proponents of the HGDP claimed a particular "urgency" for their task because their target populations were "endangered". These risks included physical threats to their survival and their assimilation into neighboring populations, either of which would diminish their value to geneticists (Lock, 1994: 605).¹⁰ This assumption contradicts indigenous narratives of survival and continuity, as well as the anthropological recognition that many indigenous communities are flourishing, even producing their own "indigenized modernities" (Sahlins, 1999). The HGDP also exhibited many of the conceptual flaws which led to the "crisis of representation" that preoccupied North American cultural anthropology during the late 1980s and early 1990s, including the assumption that indigenous communities can be studied under so-called "natural conditions" (Santos, 2002: 90). By identifying "primitive isolates" as their unit of study, the scientists associated with the HGDP made questionable assumptions about the genetic homogeneity of these groups and the degree to which they are separate and different from neighboring populations.¹¹ Their misuse of *social* science led to flawed claims about genetic diversity and *natural* science. Research that examines contemporary societies without taking their history,

9. The organizers of the HGDP were primarily interested in human evolutionary history, asking, "who we are as a species and how we came to be" (Cavalli-Sforza in Lock 1994: 603).

10. Hayden (1998) has questioned the political implications of representing organisms by their genes. If biodiversity is perceived solely in terms of DNA, is the threat of extinction of a population or species reduced to a problem of information management? The equation of organisms and their DNA might lead to the preservation of genetic information in lieu of protecting endangered plants or animals, or providing assistance to human populations whose lives might be at risk (Hayden, 1998). Weiss (1996: 28) has disputed the claim that the HGDP values DNA at the expense of its carriers: "We cannot, and do not, think for a moment that the HGDP is a substitute for efforts to protect and enhance human populations everywhere, no matter how small or economically disadvantaged".

11. Similar questions have been raised about the DECODE project in Iceland (Pálsson and Harðardóttir, 2002).

mobility, and interactions with the members of other societies into account follows the problematic paradigm of viewing all indigenous peoples as “lost tribes” (Kirsch, 1997). The HGDP also ignored the contemporary politics of scientific encounters. The relationship between science and society has been increasingly subjected to political scrutiny, especially the claims of neutrality and objectivity axiomatically associated with scientific methods in the past (Santos, 2002: 96). Treating indigenous peoples as sources of information problematically relegates them and their bodies to the public domain, “naturalizing” them in the process (Santos, 2002: 83). They are treated as objects of study rather than agents in their own right. Consequently one reason that the HGDP failed was because it was designed to practice “colonial science in a postcolonial world” (paraphrasing Marks, 1995: 72, cited in Cunningham, 1998: 205). Although the communities that would have been sampled by the HGDP may well have benefited from Western medicine in the past and consequently might be seen to have a reciprocal obligation to contribute to scientific research, the HGDP was viewed by critics as another initiative to transform biological material alienated from developing nations into intellectual property without providing appropriate recognition or recompense (Aoki, 1998; see also Ramos, 2000). While the scientists who proposed the HGDP privileged DNA as the tangible form in which biological diversity should be preserved, RAFI and other NGOs objecting to the project fetishised genetic material as a form of identity, leading them to consider DNA as a form of cultural property. In doing so, they invoked a new kind of threat to indigenous peoples, that foreign scientists and corporations might profit from their being, essence, or identity while simultaneously depriving them of something of value, the techno-scientific version of Frazer’s “sympathetic principle” of magic.

Bodies and ownership

Rabinow (2002: 140) has observed that multinational corporations and NGOs, despite their claims to occupy opposing positions on the political spectrum, may reinforce the same “view of the body, the self, ownership and truth”, including the supposition that genomes contain information which

can be treated as property. Similarly, Strathern (2001: 152) has noted that the language used in these debates "tends to universalize certain Euro-American assumptions about property and ownership". In the debates about Hagahai DNA, however, the difference with the Moore case is instructive. Whereas claims about Euro-American bodies are made on the basis of individual rights, the rights of groups or populations are invoked with reference to indigenous bodies. The participants in the Hagahai debates followed the Euro-American assumption that property rights are held by *individuals* in the West, but *collectively* by indigenous peoples. The claim that the Hagahai represent a distinct biological population has an instructive social history. When several Hagahai men ventured into the Western Highlands town of Mt. Hagen in search of medical assistance in 1983, the media described them as members of a "lost tribe" (Kirsch, 1997).¹² The patent on the Hagahai cell line subsequently naturalized their social status as a distinct population by suggesting that they possessed biological characteristics differentiating them from their neighbors. Their relative isolation became a key construct both *socially* in their identification as a "lost tribe" and *biologically* in the assumption that they were a distinct population (Jenkins, 1987). Given the probability that the Hagahai were exposed to the virus by a host from another population, the natural history of the variant of HTLV-1 may actually contradict their claim to being a "lost tribe".¹³ There is no biological evidence to suggest that this T-cell virus is unique to the Hagahai; its distribution may

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12. A Papua New Guinean anthropologist who visited the Hagahai shortly after their visit to Mt. Hagen concluded that, "these people were not a 'lost tribe', but a group which has kept very much to themselves for reasons other than ignorance of the world around them" (Mangi, 1988: 60). An expatriate anthropologist who subsequently carried out research with the Hagahai reached similar conclusions: "What is apparent is that the Hagahai, protected by physical and social barriers, remained relatively uninfluenced by outside forces until the early 1980s" (Boyd, 1996: 106). Yet the isolation of the Hagahai was far from complete. They had regular contact with their closest neighbors, the Pinai (Boyd, 1996: 105). Thirty men out of a population of fewer than 300 had intermittently been employed on a nearby cattle station since the 1970s (Boyd, 1996: 131). The Hagahai actively contributed to the impression that they were very isolated in order to elicit sympathy and support (Jenkins in Fishlock, 1993: 20). Their claims were uncritically accepted by the PNG media, who reported the discovery of a "lost tribe" (Kirsch, 1997: 62-63).
 13. An earlier application for a patent on another variant of HTLV-1 from the Solomon Islands was subsequently withdrawn (Bhat, 1996: 30).

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extend to neighboring populations or other parts of the Highlands and can only be established through additional biological research. Whereas the anthropologist responsible for the patent argued that the Hagahai have property rights to the variant of HTLV-1 by virtue of their *separation* and *difference* from neighboring populations, the presence of the virus may actually indicate their *connection* to others.¹⁴

Discussion

Absent from the debates about the patenting of Hagahai DNA is any consideration of differences in how the human body is conceived in Melanesian and Euro-American contexts. Kopytoff (1996: 64-65) has noted that human bodies are treated as potential property in many cultural contexts. Since the abolition of slavery, the United States legal system no longer recognizes property interests in the body (Greely, 1998: 488), demarcating a significant limit to property regimes in the US.¹⁵ However, United States patent law treats human DNA no differently than other complex organic

14. These relationships are indicative of the general problem associated with the assignment of property rights to groups: how to delineate appropriate boundaries. Who owns kava, for example, the root used in Fiji, Vanuatu and other parts of the Pacific to produce an intoxicating beverage that has both ceremonial significance and iconic status for identity? Despite the large number of potential claimants, the circulation of kava beyond this region is often described as an infringement on cultural property rights (Puri, 2001). Cultural property rights claims commonly make reference to objects or ideas that historically have a broader distribution. Exclusive claims to cultural property can only be fashioned by arbitrarily privileging the rights of one group while excluding competing claims. This is comparable to what Strathern (1996), in reference to scientific authorship and claims to invention, calls "cutting the network".

15. Kimbrell (1996: 135) points out that US restrictions on "patenting human beings [are] based on the Thirteenth Amendment of the Constitution, the antislavery amendment, which prohibits ownership of a human being". Similar restrictions apply within British common law. These ideas may be changing. Court cases in the US and the UK on posthumous requests to use the gametes of a deceased relative for procreative processes have raised challenging questions about the right to inherit genetic material as property (Strathern, 1999).

chemicals.¹⁶ Genetic material is relegated to the biological commons and the individual donor is not recognized as having sustained a loss if it is patented or otherwise claimed as property. In contrast, UNESCO maintains that the human genome is part of the shared heritage of humanity and consequently objects to property claims and other efforts to profit from human genetic material (Greely, 1998: 489-90).

Euro-American concerns about the appropriateness of treating the body or body parts as property may be contrasted with Melanesian ideas about bodies and transactions. Many societies in Papua New Guinea recognize specific male and female contributions to procreation, commonly identified as bones and blood. These contributions create entitlements that are realized in the form of limited claims on one's offspring and what they produce. People also make claims on the accomplishments of other persons and their offspring by virtue of bridewealth contributions that make reproduction socially possible. The resulting claims to other persons and their productive capacities are largely incompatible with Euro-American assumptions about the "possessive individual" derived from Lockean conceptions of labor and property (Macpherson, 1962). Nor are Melanesian notions of entitlement made on the basis of axiomatic or "natural" claims to membership within a particular social group. In contrast to Euro-American conceptions of the body, the individual, and society as universal and natural categories, in Melanesia the rights to bodies are socially produced through exchange.¹⁷

An individual's genetic material is simultaneously a singular configuration *and* the outcome of overlapping genetic histories. Euro-American debates about the ownership of Hagahai DNA were divided in part along these lines. Even where the individual is colloquially conceived as a bounded unit, genetic material might be seen to belong to either a particular person or to the genetic commons. But with respect to indigenous communities, the same material was seen to belong to a particular group or population.

None of these efforts to impose appropriate limits to property regimes accommodates Melanesian treatment of the body in terms of investments

16. Exceptions are granted for inventions that are regarded as contravening "public morality" (Greely, 1998: 489).

17. Strathern (2001: 162) describes Melanesian sociality in these terms: "everyone is enmeshed in a set of relationships predicated on exchanges of wealth between persons in recognition of the bodily energy and activities persons bestow on one another".

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from parents, contributions to bridewealth, and other transactions. While the patent of the Hagahai cell line was vigorously opposed by Melanesian public intellectuals (e.g., Liloqula, 1996; Sengi, 1996), when the Hagahai were asked to comment, they focused on their relationship to the anthropologist associated with the patent (Ibeji and Gane, 1996). They viewed the proposed transactions in terms of the social practices through which persons make claims on one another, organizing productivity and the flow of valuables in relation to the circulation of bodily substances. The debates about the patenting of Hagahai DNA were carried out in terms of rights that were considered natural and *a priori* by their Euro-American proponents, rather than the kinds of contingent social relations through which comparable claims are negotiated in Melanesia. The decision to withdraw the Hagahai patent by the US National Institutes of Health was made with reference to questions about the appropriate limits to Euro-American property regimes rather than Melanesian ideas about how persons make claims on one another. These debates operated in terms of a limited set of understandings about human bodies and body parts, including Euro-American individuals, Melanesian groups or populations, and the concept of the biological commons. The Hagahai controversy was also the first public debate about cultural property rights in Papua New Guinea (Alpers, 1996: 32), stimulating the debates that are the subject of the final case discussed in this article.

Property and pollution

The next case considers property claims made in relation to the environment. A familiar example is the concept of natural resources, which is predicated on viewing certain aspects of the environment – e.g., a stand of pine trees, a deposit of coal or a school of fish – as potential property. As the Hagahai case suggests, biotechnology facilitates the conversion of the environment into natural resources at an entirely new scale, at the level of the genome. The following examples have an effect parallel to that of biotechnology, but at the opposite end of the spectrum, enabling property models to operate at a planetary scale. In contrast to property regimes that regulate the distribution of things with positive value or “goods”, this case

is about the establishment of value in things that are harmful, what Beck (1992) calls environmental risks or “bads”. While pollution is commonly conceptualized in terms of damage to property, it is now also seen to mobilize a kind of property right. Examples include emissions trading between power plants in the United States and proposals for an international market in carbon as the means to manage greenhouse gases and their contribution to global warming. Amendments to the US Clean Air Act in 1990 created a market-based system that was designed to reduce air pollution from power plants more economically than is possible through systematic regulation (Altman, 2002: C1). Economists urged the government to target those companies that would have the greatest reduction in the volume of their emissions in relation to their expenditure on pollution controls. A power plant that burns coal with a high sulfur content might more economically reduce the volume of pollutants released into the atmosphere by installing an expensive “scrubber” than a plant that burns coal with a relatively low sulfur content. Initial estimates of the cost to reduce sulfur dioxide emissions, the cause of acid rain, by ten million tons per year were as much as US\$15 billion, but this goal was reached for substantially less. A trading company enables utilities to buy and sell allowances for sulfur dioxide emissions on spot and futures markets, effectively establishing a property right to pollute.

The response to this system has been largely favorable although significant problems remain. Some of the dirtiest plants considered it too expensive to install pollution controls and purchased the rights to continue high emissions of sulfur dioxide. The absence of control over the distribution of these plants created “hot spots” in regions overexposed to sulfur dioxide. Focusing markets on a single category of pollutants can exacerbate other environmental problems. Efforts to reduce sulfur dioxide emissions can increase reliance on hydroelectric power, which increases the sedimentation of rivers, harming fish populations (Rose, 2000). Laws that require the installation of modern pollution controls during equipment upgrades have had the perverse effect of keeping old, inefficient plants in operation, although recent policy changes will permit upgrades without requiring reductions in emissions. Some critics of these regimes argue that affected communities rather than corporations should have the right to distribute permits to pollute, which they could use or sell (Altman, 2002: C13). Comparable arrangements have been proposed for managing carbon dioxide, which is responsible for global warming. Carbon trading is one of the “Clean Development

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Mechanisms” proposed in the 1997 Kyoto accord. It is intended to balance carbon capture and emissions by establishing a system of credits and debits. Industrialized countries with high levels of emissions would pay corporations or other countries to set aside “carbon sinks”, usually in forest preserves where carbon can be stored.¹⁸ These initiatives establish the right to pollute as a form of property regulated by market forces. However, debates concerning the impact of the Ok Tedi mine in Papua New Guinea reveal other aspects of the relationship between property and pollution.

Pollution downstream from the Ok Tedi Mine

The Ok Tedi mine was the subject of contentious litigation regarding its environmental impact from 1994 to 1996. Representing 34,000 plaintiffs from Papua New Guinea, the case was adjudicated in the Victorian Supreme Court in Melbourne, where Broken Hill Proprietary (BHP), the majority shareholder and operating partner of the mine, is incorporated (Banks and Ballard, 1997). The legal claims against the mine did not turn on questions of damage to property because the Australian courts were unable to hear claims about land held under customary tenure in Papua New Guinea (Gordon, 1997: 153). Alternatively, lawyers for the plaintiffs made the novel argument that people living downstream from the mine had suffered a loss due to the mine’s impact on their subsistence economy. Judge Byrne (1995: 15) endorsed their claim, determining that: to restrict the duty of care to cases of pure economic loss would be to deny a remedy to those whose life is

18. Carbon sequestration companies create monetary value for the carbon stored in trees and soil. Subsidies for carbon sequestration act like other subsidies for social or environmental goods, e.g., farming subsidies that support a fallow period for agricultural land. The difference is that they seek to *indirectly* balance undesirable processes across the planet. One recent carbon trade involved the payment of US\$25 million to offset carbon dioxide released into the air by Entergy Corporation, a major electricity supplier, to farmers in the Pacific Northwest who agreed to use the “direct seed” method of planting. They were compensated for offsetting 30,000 tons of carbon dioxide released from Entergy power plants by avoiding plowing, which releases soil into the atmosphere and increases erosion (Environmental Defense, 2002).

substantially, if not entirely, outside an economic system which uses money as a medium of exchange. It was put that, in the case of subsistence dwellers, loss of the things necessary for subsistence may be seen as akin to economic loss. If the plaintiffs are unable or less able to have or enjoy those things which are necessary for their subsistence as a result of the defendants' negligent conduct of the mine, they must look elsewhere for them, perhaps to obtain them by purchase or barter or perhaps to obtain some substitute.

The courts recognized in subsistence production a set of rights, relations and values comparable to those which organize the ownership of property in capitalist societies. The ruling established a precedent that affirmed subsistence rights.

An out-of-court settlement of the case against the Ok Tedi mine was reached in 1996. However, dissatisfaction with the implementation of the settlement agreement prompted the communities downstream from the mine to return to the courts in Melbourne in 2000. They accused BHP of violating its commitment to halt riverine disposal of tailings and other mine wastes, which have caused extensive environmental damage downstream. While 1,400 km² of rain forest along the Ok Tedi and Fly Rivers is already dead or under severe stress, the damage is expected to spread further downstream, eventually covering 2,040 km² (Higgins, 2002), and potentially as much as 3,000 km² (Parametrix, Inc. and URS Greiner Woodward Clyde, 1999: 8). Changes to the river system will eventually stabilize, but local species composition is not expected to return to conditions before the mine, with much of the rain forest along the river becoming savannah grasslands (Chapman et al. 2000: 17). In a report commissioned by the Prime Minister of Papua New Guinea, the World Bank recommended the early closure of the Ok Tedi mine once programs to facilitate the social and economic transition to life after the mine are implemented. When BHP (now BHP Billiton) indicated its intention to withdraw from the project, both the government of Papua New Guinea, which relies on the Ok Tedi mine for 18 percent of its foreign exchange earnings, and the communities downstream, which seek additional compensation for damages and opportunities for development, recommended that the mine continue operating until 2010, by which time the ore body will have been exhausted (Higgins, 2002). The PNG parliament subsequently passed the Mining (Ok Tedi Mine Continuation (Ninth Supplemental Agreement)) Act of 2001, establishing the conditions of BHP Billiton's exit from the mine, which will continue to operate independently. BHP Billiton subsequently

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transferred its 52 percent share in the mine to the Sustainable Development Program Company that it established in Singapore (Crook, 2004).¹⁹

The new trust company has been described as a “poisoned chalice” (Evans, 2002) because it relies on the continued operation of the mine (including the disposal of more than 80,000 tons of mine tailings per day into local rivers) to pay for development programs. The primary purpose of the trust is to provide BHP Billiton with indemnity from future claims regarding damage to the environment that will result from the continued operation of the mine. The Mining Act limits corporate liability to the value of the trust, even though it is unclear whether the economic returns from BHP Billiton’s shares in the mine will be sufficient to offset the damages that will result. A cost-benefit analysis of this relationship was commissioned by the PNG government and completed in 2001, although the results were never made public. The Mining Act also provides the Ok Tedi mine with unprecedented power and authority to establish environmental standards for its operations and procedures for measuring and reporting compliance. Even given the influence of neoliberal economic policies that promote corporate self-regulation, the agreement represents an extraordinary transfer of rights from the state and ordinary citizens to a private company (Divecha, 2001). Despite the environmental problems downstream, no changes to the current operating procedures are planned.²⁰ The Mining Act effectively conveys a right to pollute to the Ok Tedi mine in return for the transfer of BHP Billiton’s assets to the trust.

The Mining Act also legalized new arrangements between the mine and the affected communities, known as the Community Mine Continuation Agreements (CMCAs). The CMCAs refer to the rights of two groups of people, identified as the “land owners” and the “and users”. These categories are my gloss of the distinction made by the Yonggom people, who live along the Ok Tedi River, between *ambip kin yariman*, persons who own land along the river, and *animan od yi karup*, the people who derive food (*animan*)

19. The outstanding shares in the Ok Tedi mine are held by the PNG government (30 percent, including 12.5 percent on behalf of the province and 2.5 percent on behalf of land-owners from the mine area) and 18 percent by the Canadian mining company Inmet (Ok Tedi Mining, 2003).

20. The Ok Tedi mine has operated a dredge in the lower Ok Tedi River since 1998, but dredging only removes approximately one quarter of the material released into the river (Ok Tedi Mining, 2003).

and money (*od*, also shell valuables) from the same land. Previous negotiations between the mine and these communities reached an impasse during the implementation of the 1996 settlement agreement. The mine was willing to provide compensation for environmental damage only to those persons who owned the land along the river where the damage had occurred. Lawyers for BHP argued that there is no provision in common law for the payment of compensation for damages to persons who are not the rightful property owners. When the lawyers for the local plaintiffs asked me to assist with the implementation of the settlement, I objected to the restriction that BHP had imposed on the payment of compensation, noting that the case had been argued on the basis of subsistence rights rather than damage to property. If only those persons identified as property owners were eligible for compensation, a substantial proportion of the persons who previously made use of the land and resources in question would be excluded. The validity of this argument was eventually acknowledged and the rights of both the "land owners" and the "land users" were included in subsequent agreements between the mine and the affected communities. With the passage of the PNG Mining Act of 2001, these categories were given the force of law, providing formal recognition of subsistence rights in Papua New Guinea. This case suggests that damages from pollution are not limited to property claims and that other relations between persons and land should also be considered. Yonggom relations to land differ from Euro-American property models in another respect as well.²¹ While the relationship between the *yariman* and his land may be translated as ownership, it also has other meanings. The central actor in divinations held to seek the cause of a persistent illness, or *anigat*, is the *anigat yariman*. This role is filled by the senior kinsman or guardian responsible for the patient's well-being. Similarly, the sponsor of an *arat* pig feast is known as the *arat yariman*. The *yariman* relationship is based on the responsibilities of kinship, guardianship and

21. Filer (1997: 162-164) has described how ideas about land ownership in Papua New Guinea have changed over time. The Tok Pisin "*papa bilong graun*" of the colonial era characterized this relationship in the idiom of kinship. This was condensed into the term "*papagraun*" after independence in 1975, and subsequently anglicized as "*landona*". In this form, the idiom of kinship is no longer marked. Land ownership in Papua New Guinea is increasingly associated with populist sentiments (Filer, 1997: 164), including protests against land privatisation schemes in the capital of Port Moresby.

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sponsorship. Given that *ambip kin* refers to both a particular bloc of land and the specific lineage or clan which holds the rights to that land, *ambip kin yariman* indicates the person or persons responsible for lineage or clan land. This relationship has figured significantly in recent efforts by lawyers representing the communities located downstream from the mine to challenge the validity of the Community Mine Continuation Agreements. The CMCAs authorized any "person representing or purporting to represent a Community or clan" to bind its members to the agreement, "notwithstanding (...) that there is no express authority for that person to sign or execute the Community Mine Continuation Agreement on behalf of the members of the Community or clan concerned". This would legally commit the members of the village to the agreement without necessarily having secured their consent. The members of future generations would also be bound by the agreement. Among the provisions of the CMCAs was the obligation to "opt out" of continuing legal action against the mine, which seeks to enforce the terms of the 1996 settlement agreement, including the requirement to implement the most practicable form of tailings containment. The lawyers for BHP Billiton included this provision in the CMCAs in order to facilitate the corporate exit from the Ok Tedi project by discouraging the people living downstream from the mine from participating in the lawsuit.

A hearing was scheduled in Melbourne in February, 2002 to evaluate the request for an injunction against the implementation of the CMCAs. In advance of these proceedings, the lawyers representing the communities downstream from the mine asked me to provide expert advice regarding the relationship between the political authority of elected or appointed officials in contemporary villages and the rights to land held under customary land tenure systems recognized by PNG law. Most of the villages downstream from the Ok Tedi mine were established during the colonial era. The authorization of a village representative to bind the members of that village on matters concerning the disposition of land threatens to bypass the provisions of customary land tenure. It is a requirement of customary law in Papua New Guinea that decisions concerning land that is held under customary tenure must incorporate the views of all of those persons who have ownership rights to the land in question.

In contrast to land-owners, village representatives acquire their political authority from the government or other electoral processes. They lack authority over the disposition of land, which among the Yonggom is

held by individuals in association with particular lineages or clans rather than by the village or community as a whole. Given that the Community Mine Continuation Agreements are fundamentally concerned with damage to local land and rivers, they necessarily invoke customary land rights. In documents prepared for the hearing in February, 2002, I argued that village representatives, even if democratically elected, lack the authority to bind other persons to decisions affecting the disposition of their land. Consequently, it was my view that the signatories to the CMCA did not have the authority to commit the other members of their village or community to the agreement, including the obligation to "opt out" of the on-going lawsuit. Immediately prior to the February hearing on the validity of the CMCA, lawyers for BHP Billiton and the Ok Tedi mine agreed not to enforce the contested provision of the CMCA that would require the people living downstream from the mine to "opt out" of the legal action without first providing the lawyers for the plaintiffs with sufficient notice to return the matter to the courts for review. In effect, the lawyers for the Ok Tedi mine and BHP Billiton temporarily conceded to the injunction sought by the lawyers for the plaintiffs. This agreement allows for the continued participation of the people living on the Ok Tedi and Fly Rivers in their legal action against BHP Billiton and the Ok Tedi mine.

Discussion

The examples from the Ok Tedi case suggest that Euro-American property models fail to register the social consequences of pollution, including impacts on subsistence practices. They do not accommodate local constructions of responsibility towards the land and they remain at odds with customary land tenure. Yet by contesting Euro-American assumptions about property in the courts and by seeking compensation from the mine for pollution, the Yonggom and their neighbors accepted a particular view of "nature" as a legitimate object of human management. Implicit in this perspective is the assumption that development is a fundamental good (see Crook, 2004). The result is the transformation of their environment into an object of science, planning and politics (see Scott, 1998).

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The debates about the future of the Ok Tedi mine also invoke the “tragedy of the commons” argument that privatisation promotes sustainable resource use (Hardin, 1968). The threat of environmental degradation is used to justify private property, which is naturalized as the most efficient form of stewardship. Yet privatisation can also lead to environmental degradation (Feeny et al. 1990). In the Ok Tedi case, the mine mobilized new property rights to pollute even though it was responsible for the environmental problems downstream. Despite its shortcomings, the “tragedy of the commons” model remains influential and has even been applied to planetary levels in calls for the management of the “global commons” as the solution to international environmental problems (Goldman, 1998). The resulting vision of the planet as a single ecosystem raises important questions about the recognition of different social interests (Milton, 1996).

While the view derived from Locke (1960 [1698]) is that property is created through the addition of labor to nature, these new forms of property mobilize the right to add pollution to the environment. Their emergence substantiates Beck’s (1992) claims about the reorganization of modernity around the management of environmental risks. The Ok Tedi case challenges the “tragedy of the commons” argument that increased propertisation is the most efficient means of addressing the problems of environmental degradation.²²

Property in culture

Proposals for recognizing cultural property rights represent a powerful set of conventions. The timing of these initiatives has already been noted. The World Trade Organization has imposed a standardized intellectual property regime (TRIPS) at the international level, which simultaneously protects Disney cartoons, textbooks and novels, patents on pharmaceuticals and innovations in

22. The US Environmental Protection Agency has recently proposed a pollution credit trading program for water, which would provide mining companies with the option of purchasing pollution credits instead of limiting the discharge of tailings and other mine wastes into local waterways (Perks and Weistone, 2003: 15-16).

biotechnology. Critics have noted that TRIPS may require developing countries to purchase the modified forms of material that they previously used without restriction. This is the case for certain pharmaceuticals and genetically engineered varieties of seed, for which their contribution to the original form of the commodity is not legally recognized (Shiva and Holla-Bhar, 1996).

Proposals to protect cultural property rights are intended in part to correct these imbalances by providing legal protection to communities that is comparable to what is available to corporations. Whereas disputes about cultural property rights are increasingly common in North America (Brown, 2003) and Australia (Kalinoe, 2004) they remain largely hypothetical in Papua New Guinea. Consequently this section of the article addresses general debates about cultural property rights rather than a particular case study.

A fundamental weakness of initiatives designed to protect cultural property rights is the tension between their universalist scope and local projects and concerns. The language used by UNESCO, WIPO and other multilateral agencies is framed in oppositional terms, following generalizations about the differences between Euro-Americans and indigenous peoples, including private versus collective forms of ownership, interest in commodification versus relations organized through reciprocity, and individual creativity versus inherited traditions. These binary oppositions beg the question of cultural difference among indigenous peoples. Their interpretation of tradition also perpetuates stereotypes about their cultural conservatism, ignoring their capacity for innovation and invention.

Objections to cultural property rights typically operate at the level of the universal as well. One concern is the need to protect the "cultural commons", the objects and ideas that have already entered the public domain (Brown, 1998: 198; see also Brush, 1999). Limiting access to cultural property may be incommensurate with liberal political values that emphasize the free exchange of ideas and information, although comparable mechanisms to protect intellectual property are regularly used to defend corporate interests. There are also practical impediments to the assignation of ownership rights when multiple and overlapping claims exist (see note 14). These problems include the definition of membership within particular communities. Brown, (1998: 204) urges caution with respect to proposals that would empower the state or multilateral bodies to monitor genre boundaries or police ethnic identity. Regulations or policies designed to benefit particular cultural groups might also be exploited by corporations or other parties to the detriment of the communities whom the policies were originally

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intended to support (Dominguez, 2001: 183). The potential for corporate abuse of cultural property rights schemes has led some NGOs to argue that they should be seen as a plot of the powerful rather than a potential “weapon of the weak” (Tauli-Corpus, 1999).

The transaction costs associated with formal systems for regulating cultural property rights would also impose significant constraints on the sharing of ideas (Brush, 1996: 661-63). An interesting proposal to mitigate this concern involves restricting the scope of cultural property rights to commercial applications (Rosen, 1997: 255-59). These more limited domains might be more amenable to tailored solutions (ibid: 256). While this would presumably reduce the general threat to the public domain or “cultural commons”, it would be incommensurate with Melanesian expectations, which include the right to withdraw material from circulation and to limit or restrict access to secret or sacred cultural property (Kalinoe, 2004). Even if cultural property rights could be successfully mediated by the market, structural limitations might prevent these procedures from benefiting the very communities whose interests they are intended to serve. Dove (1994: 2) relates the Southeast Asian parable of the peasant who finds a diamond but is obligated to sell the gem to his local patron, who pays him but a fraction of the stone’s value and profits enormously when the stone is resold.²³ Dove argues that the communities that cultural property rights proposals are designed to protect generally lack the knowledge, political resources and economic networks required to take advantage of the opportunities seemingly afforded to them. Development at the local level is contingent on

23. Parables should not be mistaken for history. Consider a contrasting account from Papua New Guinea, describing historical events rather than fiction. During the peak of the Mt. Kare gold rush, during which thousands of Highlanders staked out individual claims and extracted gold worth millions of dollars (Vail, 1993), a father-and-son team of entrepreneurs from Australia flew to Mt Hagen, intending to buy gold at low prices from “natives” who were ignorant of its true value. Several weeks later, the pair complained bitterly to the media about their experiences, for they had spent their life savings purchasing brass shavings from enterprising Hageners, who misrepresented the metal as gold from Mt Kare. At issue is not whether Papua New Guineans are more resourceful than Indonesian peasants, but whether local options should be constrained on the basis of a parable. Nor is it clear whether the act of finding a stone is an appropriate analogue for the accumulation of indigenous knowledge.

the reform of the political and economic conditions responsible for inequality. Dove (1996) also suggests that payments for cultural property rights would erode and ultimately destroy the basis on which these communities produce anything of significant value to the rest of the world, their underlying difference.²⁴ However, this argument is tenable only if local agency is ignored, including widespread Melanesian desires for greater participation in the global economy.

An alternative to the formulation of universal models for cultural property rights is to develop policies or legislation that build on local precedents. Arguments about cultural property rights are usually framed by the problems of Euro-American profiting (or profiteering) from the restricted ownership of knowledge and things in the forms in which they are produced, while denying comparable rights to persons and communities in places such as Papua New Guinea. Yet the motive for establishing cultural property rights is not simply to bring indigenous ownership in line with Euro-American options by providing the same legal rights to Motuans over their tattoos that Disney has over its cartoons, or controls over certain varieties of sago to their cultivators that biotech firms have over the hybrid seeds that they produce. For example, an early proposal by two Papua New Guinean public intellectuals sought to use customary claims of ownership to limit the performance of particular songs and dances to group members, rather than licensing them for use by others (Kalinoe and Simet, 1999). Could Melanesian ways of investing in relationships and recognizing multiple ownership serve as the basis for protecting local knowledge and practices? This would require cultural property rights policy or legislation to take the form of Melanesian claims to what they produce, use and transact. This is the premise of *sui generis* systems of cultural property rights, as Kalinoe (2004) argues. While recognizing indigenous mechanisms for protecting cultural property rights might enrich Euro-American legal discourses (Rosen, 1997: 258; Barron, 1998), in practice “a *sui generis* system developed in Papua New Guinea would be virtually useless in protecting the exploitation of traditional knowledge elsewhere in the world, unless other countries agree to adopt similar laws” (Busse and Whimp, 2000: 24).

24. Dove (1996) writes about biodiversity; the reference to culture is mine.

Discussion

These debates reify culture in relation to property claims. While Harrison (1993) identified parallels between the Euro-American category of intellectual property and Melanesian traffic in ritual knowledge, he subsequently observed that most cultural property has undergone a transformation from “goods” into “legacies”, the value of which is largely associated with the past (Harrison, 2000). More generally, Dominguez (1992) and Jackson (1995) have described the hegemonic effects of the Euro-American concept of culture, which leads to the reproduction of local beliefs and practices in relation to imported categories. One consequence of this process is that only select aspects of local lives are recognized as “cultural”, while the remainder are ignored. Claims to cultural property are shaped by Euro-American conceptions of culture, including the emphasis on performance.

Local alternatives to the concept of culture include the Tok Pisin term *pasin* or “fashion”, analogous to ethos (Sykes, 2001: 3-8). *Kastam* or “custom” refers to a codified and generally oppositional form of collective self-reference (Keesing, 1989). The Motu equivalent is *kara*, or “way”. These concepts are largely ignored by cultural property rights discourse. To ensure their recognition by universalist proposals to protect cultural and intellectual property rights, Melanesian ideas and practices must be represented in language that is commensurate with Euro-American standards (Busse and Whimp, 2000: 24; see Povinelli, 2002).

Conclusions

Property claims now extend from the molecular to the planetary. Claims to cultural property are similarly pervasive (see Brown, 2003). Paradoxically, the expansion of property claims occurs at a time when challenges to the conventional justifications for property regimes are also on the rise. While patents are seen to provide economic rewards for creativity and capital investment, recent studies have questioned their efficacy in

stimulating innovation (Nelson and Mazzoleni, 1997).²⁵ Other research challenges the widespread assumption that the standardization of property rights by the state facilitates economic development (van Meijl and von Benda-Beckmann, 1999). Property regimes may also constrain new economic opportunities by placing “needless restrictions on securities transfer and capitalist expansion” (Maurer, 1999: 365-66).

Despite these negative appraisals of property regimes, new efforts to mobilize the kinds of protections afforded to authors, inventors and corporations to culture have been proposed by multilateral organizations and NGOs. Critics of these proposals question whether these measures are in the best interests of the communities that they are intended to benefit. Also at issue is whether property can be both the cause and the solution to social and economic problems.

The resulting debates over the appropriate limits to property regimes operate in terms of familiar Euro-American categories, including the body, nature and culture. Whereas Euro-American claims to genetic material are made in terms of individual rights, the ownership of genetic material from indigenous peoples is collectively attributed. Alternatively, the human genome may be treated as part of the biological commons. Yet these views exclude Melanesian understandings of the body that emphasize transactions between persons.

With regard to the relationship between property and pollution, arguments derived from the “tragedy of the commons” model assert that privatisation is the most appropriate response to the challenges of sustainable resource use. The expansion of the commons leads to contradictory applications of the property construct in the creation of positive value in the form of natural resources and negative value through pollution. The use of property rights to manage both production and destruction is challenged by many communities in arguments about the value of place (Escobar, 2001), including ideas about kinship and belonging that may invoke the duty of care. However, even these objections may render “nature” the legitimate object of human management.

25. For example, the economic benefits conferred by patents may discourage innovation in the pharmaceutical industry by providing economic incentives to companies for making small modifications to established drugs when their patents expire, rather than expending resources to develop new medicines.

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Conventions for recognizing some forms of cultural property are already in place. The legitimacy of heritage protection, including sacred sites, art and other material manifestations of culture is widely recognized. These practices are institutionalized to the point of nation-making in museums. However, at the margins of this process are intangible forms of heritage, including music, dance and other performance genres, whose standing as cultural property remains contested (although see UNESCO, 2003). Cultural property claims operating at the more abstract level of ideas, designs and language are increasingly seen to be impracticable and undesirable, if not potentially detrimental (Brown, 2003). Yet in Melanesia, these conventions and the debates they engender have the consequence of reifying the Euro-American concept of culture. In *Property and Persuasion*, Rose (1994) reminds us that property claims depend on the effective communication of possession. When the objects of property claims “seem to resist clear demarcation”, which is the case for ideas, elaborate systems of registration are required, including patents and copyrights (ibid: 17). Definitional agreement must precede the recognition of property claims.

These concerns are clearly relevant to the histories of people on the margins of common law, as they were the basis for claims of adverse possession supported by assertions like *terra nullius*, in which indigenous land claims were not deemed to rise to the level of property. In the debates on property limits discussed here, it is notable that while the same communities may now be engaged participants, they still bear the “burden for social commensuration” (Povinelli, 2001: 329-30). To assert or object to particular property claims, they must acknowledge the entities that are invoked.

Examination of these debates in the context of Melanesia, where the language and practices of transactions operate according to assumptions that challenge Euro-American property models, reveals a significant consequence of the globalization of property forms. While the debates described here represent important political struggles over the appropriate limits to property regimes, they operate in terms of Euro-American categories of the body, nature and culture that travel along with property, and thus potentially limit the very means by which property claims might be made or contested.

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Resumo

A aplicação do conceito anglo-americano de propriedade está se expandindo exponencialmente. Novas formas de propriedade têm sido propostas pelas ciências da vida para a informação genética, por governos e Organizações Não Governamentais (ONGs) para o direito de poluir, e por organizações multilaterais para a cultura. Entretanto, essas demandas novas por propriedade precipitaram debates sobre os limites apropriados para regimes de propriedade. Uma consequência não intencional desses debates, contudo, tem sido a promoção dos conceitos anglo-americanos de corpo, natureza e cultura. São acionados exemplos da Melanésia, onde a língua das transações desafia as pressuposições que dão suporte aos modelos euro-americanos de propriedade. O artigo examina debates sobre uma patente para uma linha de célula humana, o gerenciamento da poluição de uma mina de cobre e ouro, e se a cultura pode ser apropriada.

Abstract

The application of the Euro-American concept of property is expanding exponentially. New forms of property have been proposed by the life sciences for genetic information, by both governments and NGOs for the right to pollute, and by multilateral organizations for culture. Yet these new claims to ownership have precipitated debates about the appropriate limits to property regimes. An unintended consequence of these debates, however, has been to promote Euro-American concepts of the body, nature and culture. Examples are drawn from Melanesia, where the language of transactions challenges the assumptions that underlie Euro-American property models. This article examines debates about a patent for a human cell line, the management of pollution from a copper and gold mine, and whether culture can be owned.